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PROJECT INSPECTOR

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TO

Progress Report for July and August 1964

1. PROGRESS OF WORK

The period covered by this report was devoted to acquiring back-ground material and equipment for preliminary experiments.

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A literature search was made for pertinent material. ASTIA files, files of photographic and photogrammetric periodicals and applicable texts were searched. A number of manuscripts were viewed at the ASTIA installation at Hanscom Field and prints of twelve documents are on order. Ten papers have been examined and the pertinent material extracted. Information was procured on [REDACTED] equipment. Specifications have been obtained for various types of television and projection equipment which may be useful.

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A closed laboratory area has been set up in a "secured" area for the use of the project group. Two RCA TM-2A Monitors, and a [REDACTED] 760 Video Scanner have been made available. Some 8 in. x 11 in. sample positive transparencies and two precision optical targets have been procured. An available S.E.I. exposure meter has been repaired and made ready for use. Three optical lenses and three samples of screen material are on order.

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2. PROBLEM AREAS ENCOUNTERED

To date, the literature search and preliminary calculations give no contra-indications to the suggested method of operation.

Sufficient Intensity of Illumination

The human eye accommodates itself over a very large range of illumination levels. The capability of the eye for defining images is constant over a factor of ten, in illumination, above and below the level of accommodation. This suggests that the illumination required for the film

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is a function of the general illumination level. Therefore, if all the light sources in the room can be properly controlled, a lower level of illumination should suffice for the film viewing.

A specification study is being made of existing television projection equipment. It has already been found that units with a calculated capability of 1000 foot lamberts, for one square foot, are available.

#### Information for the Feedback Photocell

If the overall problem is divided into three sections (large, medium and small areas), the major problem is presented by the medium area device. If a restriction (that the film be viewed from above only when still) is acceptable, the problem may be solved by a recirculating video recorder. The recorder would supply the feedback information while the photocell is obscured.

#### Definition

Use of normal television techniques should allow for attainment of approximately 40 lines/mm over an area 1/2 in. x 1/2 in. Theoretically, we can increase the lines/mm by reducing the overall area and/or using more lines in the raster and a greater video band-pass. Aberrations in the optics may limit the resolution. This must be investigated.

#### 3. PROJECTED WORK FOR THE NEXT PERIOD

The accumulation and correlation of background information will continue. This will include information on normal P.I. operating procedures and physiological and psychological factors.

With the equipment acquired and on order, an attempt will be made to test the suggested techniques, but at lower light intensity and resolution levels.

The search for suitable components and apparatus, which could be incorporated in a system, will continue.

#### 4. STATUS OF FUND EXPENDITURES TO END OF PERIOD

Total expenditures for the month of July 1964 (through 7/26/64) were [REDACTED] exclusive of fee.

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25X1A Total expenditures for the month of August 1964 (through 8/23/64) were [REDACTED] exclusive of fee.

Cummulative expenditures were [REDACTED]

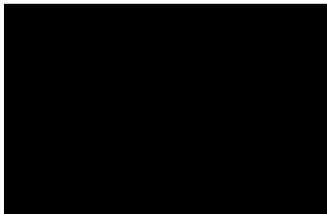
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5. VERBAL COMMITMENTS AND/OR AGREEMENTS

On August 11 we were visited by [REDACTED] and a project meeting was held. Those present at the meeting were:

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Papers titled "Development Objectives" and "Design Objectives for Electrical Modulator Light Viewer" were reviewed. The discussion was broad and the desired goals were clarified. In the discussion, it was suggested that the required 2000 foot lamberts of illumination was high and that it might be feasible to design a satisfactory system with less illumination. The possibility of using different spot sizes and changing the color temperature of the light was also discussed.

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